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Arrhythmias

LONG TERM SAFETY AND EFFICACY OF STRATEGIC THERAPY PROGRAMING OF IMPLANTABLE CARDIOVERTER-DEFIBRILLATOR IN A PRIMARY PREVENTION PATIENT POPULATION

ACC Moderated Poster Contributions
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Session Title: ICD Patients: Predictors of SCD/Shock and Lead Management in Infection/Lead Failure
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Background: ICD implanted for primary prevention of malignant ventricular arrhythmias are currently considered first-line therapy in appropriately selected patients. Previous studies have demonstrated that the utilization of strategic programming to reduce the burden of shock delivery are both feasible and safe in a medium-term follow up period of up to 1 year.

Methods: The study cohort comprised of 300 patients for whom ICD's of various manufacturers were implanted between 2005 and 2009. The ICD's of 160 patients were programmed in a manner aimed to reduce the incidence of shock deliveries (group 1). This strategy comprised of a ventricular tachycardia (VT) monitoring zone for rates between 167 and 181 beats per minute, anti-tachycardia pacing for stable VT at rates between 182 and 250 beats per minute maintained for 30 beats and high energy shock delivery for rates above 250 beats per minute. SVT discrimination was enabled for rhythms comprising of cycle lengths>300milliseconds. The ICD's of the remaining 140 patients were programmed in the traditional way by physician's discretion (group 2).

Results: Baseline characteristics were similar between the groups, and the average follow up period was 3.5 years. A Cox regression analysis model showed that the incidences of both appropriate and inappropriate shock deliveries were significantly reduced for group 1 patients compared to group 2 patients (3.8% Vs. 7.9%, p=0.01 and 1.3% Vs. 10%, p<0.001, respectively). The incidence of syncope of arrhythmic origin was lower as well among group 1 patients (5% Vs. 0.6%, p=0.001). The incidence of NSVT was lower for group 1 patients (3.6% Vs. 15%, p=0.004), while no difference was evident in the incidence of SVT events between the groups. In accordance with these findings, a multivariate model showed that device programming conferred a 65% and 76% reduction in the incidence of appropriate and inappropriate shock deliveries, respectively.

Conclusions: Long-term follow up results of strategically chosen VT detection and therapy parameters show consistent efficacy in reducing shock deliveries, as well excellent safety profile for a primary prevention patient population.